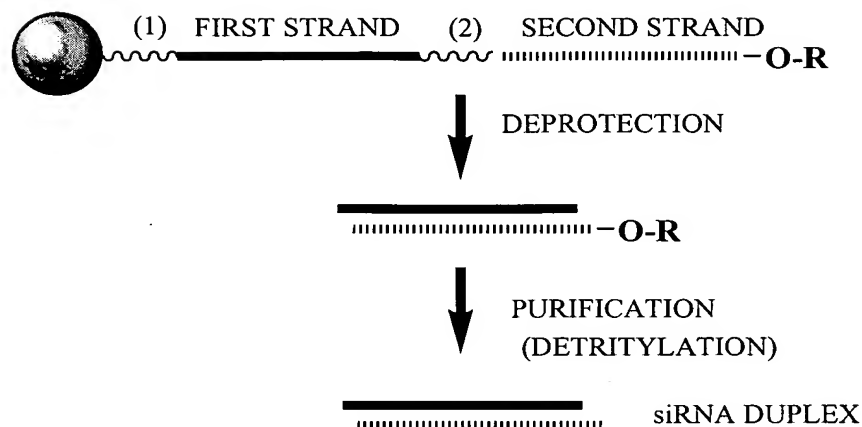


Figure 1

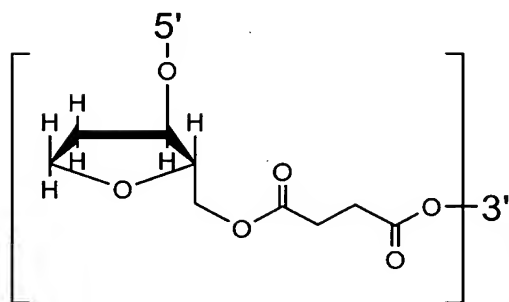


= SOLID SUPPORT

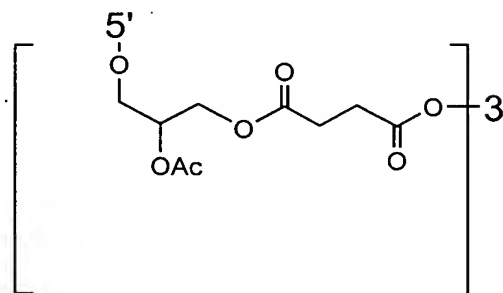
R = TERMINAL PROTECTING GROUP
 FOR EXAMPLE:
 DIMETHOXYTRITYL (DMT)

(1) = CLEAVABLE LINKER
 (FOR EXAMPLE: NUCLEOTIDE SUCCINATE OR
 INVERTED DEOXYABASIC SUCCINATE)

(2) = CLEAVABLE LINKER
 (FOR EXAMPLE: NUCLEOTIDE SUCCINATE OR
 INVERTED DEOXYABASIC SUCCINATE)



INVERTED DEOXYABASIC SUCCINATE
 LINKAGE



GLYCERYL SUCCINATE LINKAGE

Figure 2

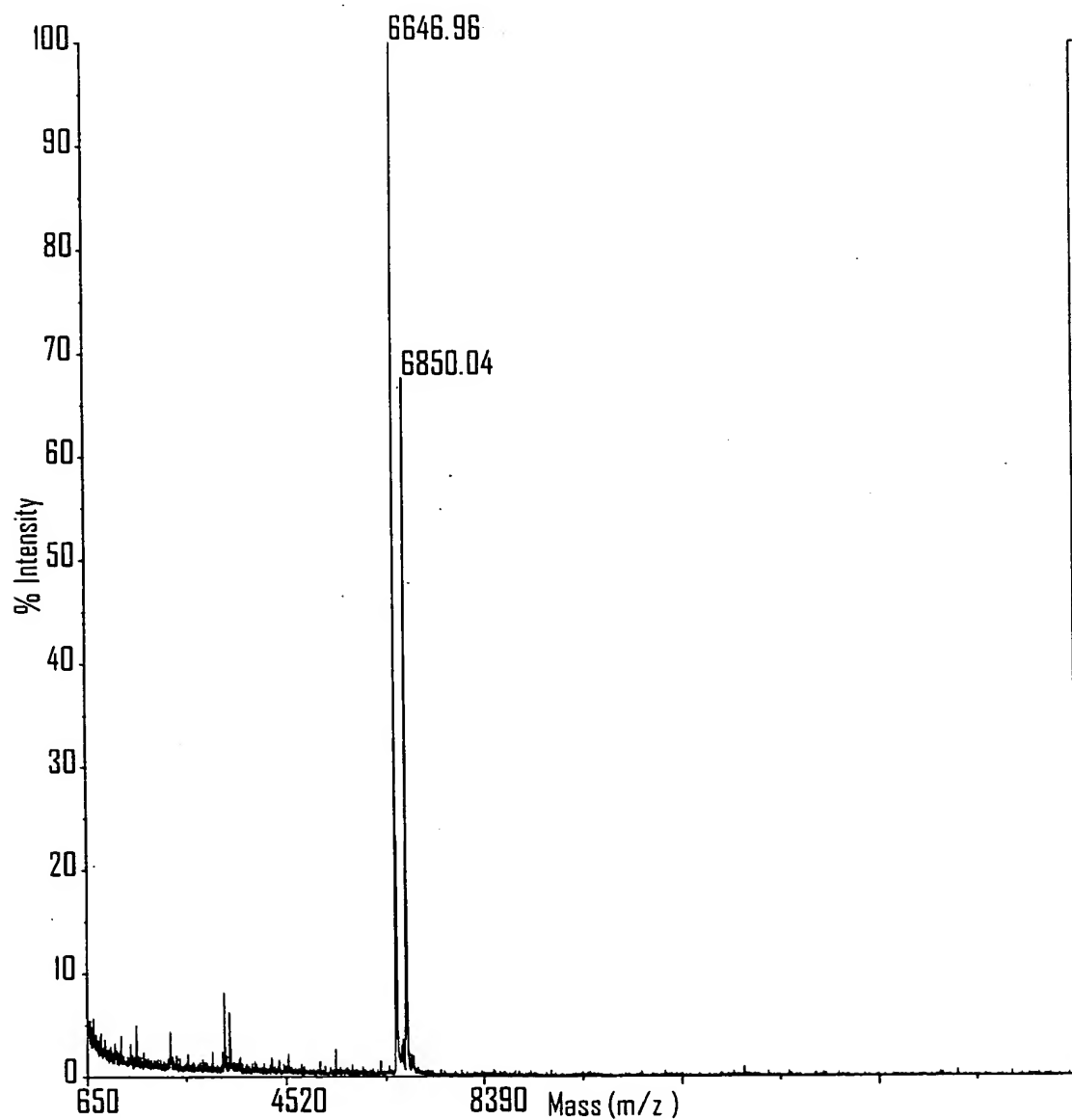


Figure 3

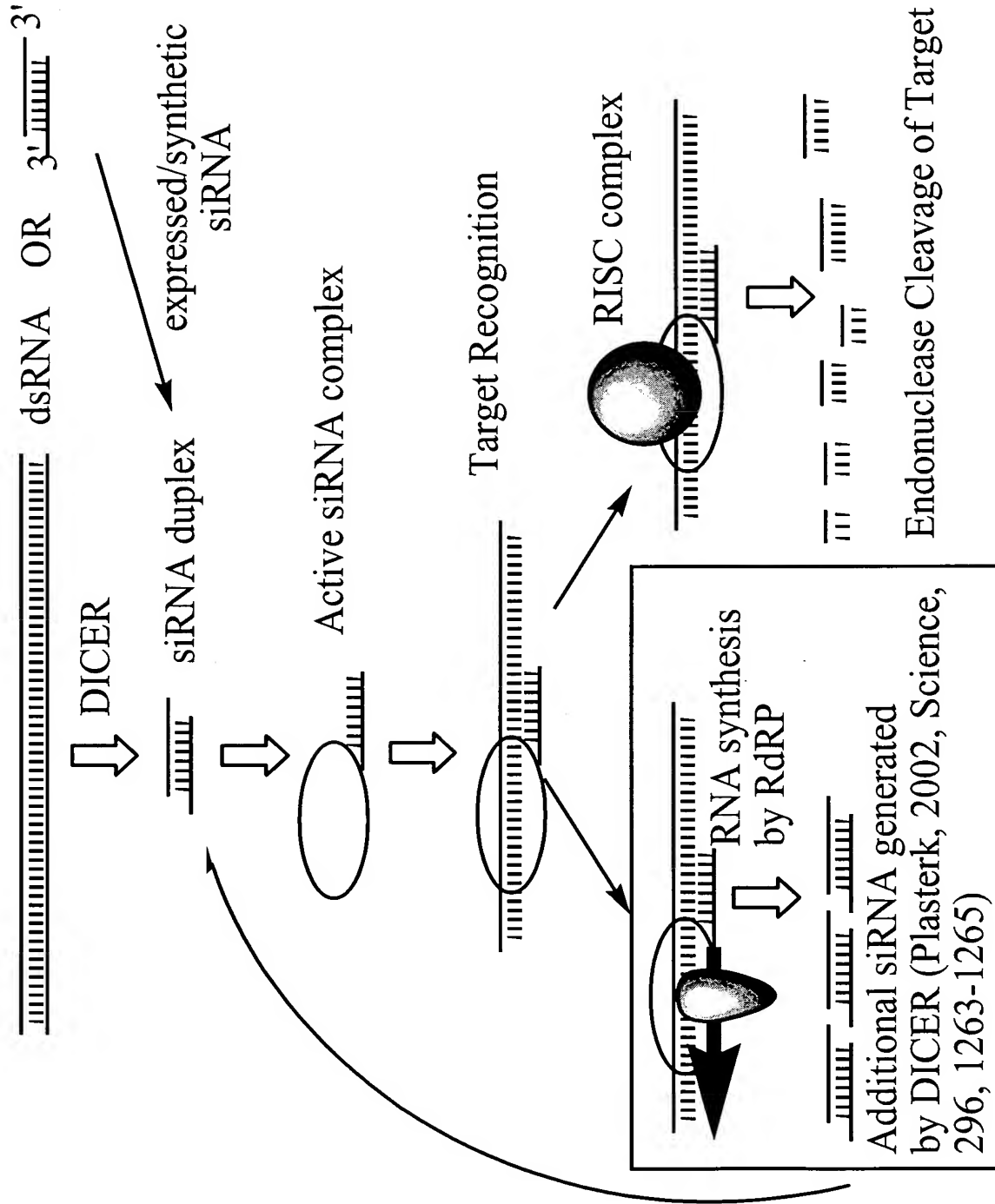
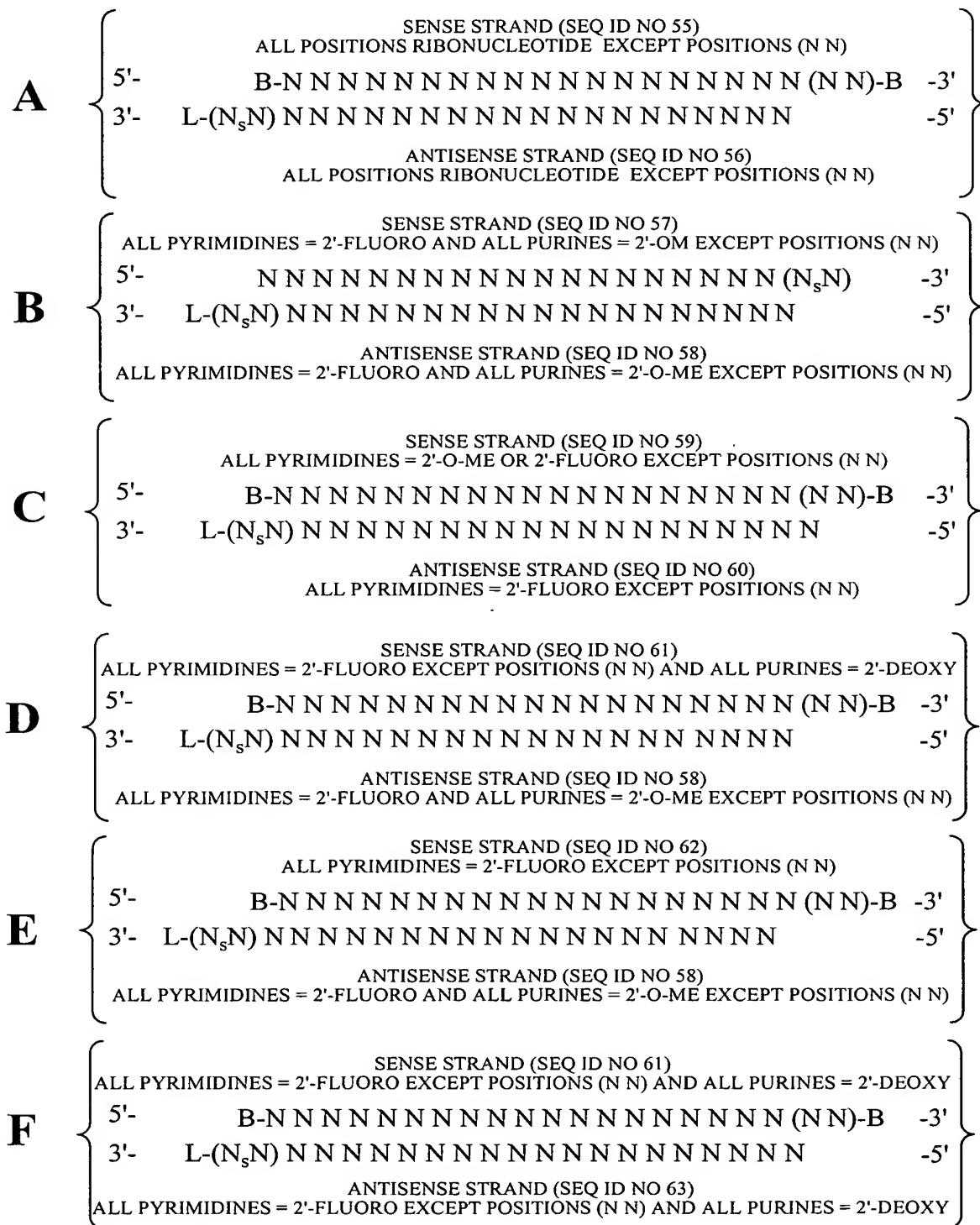
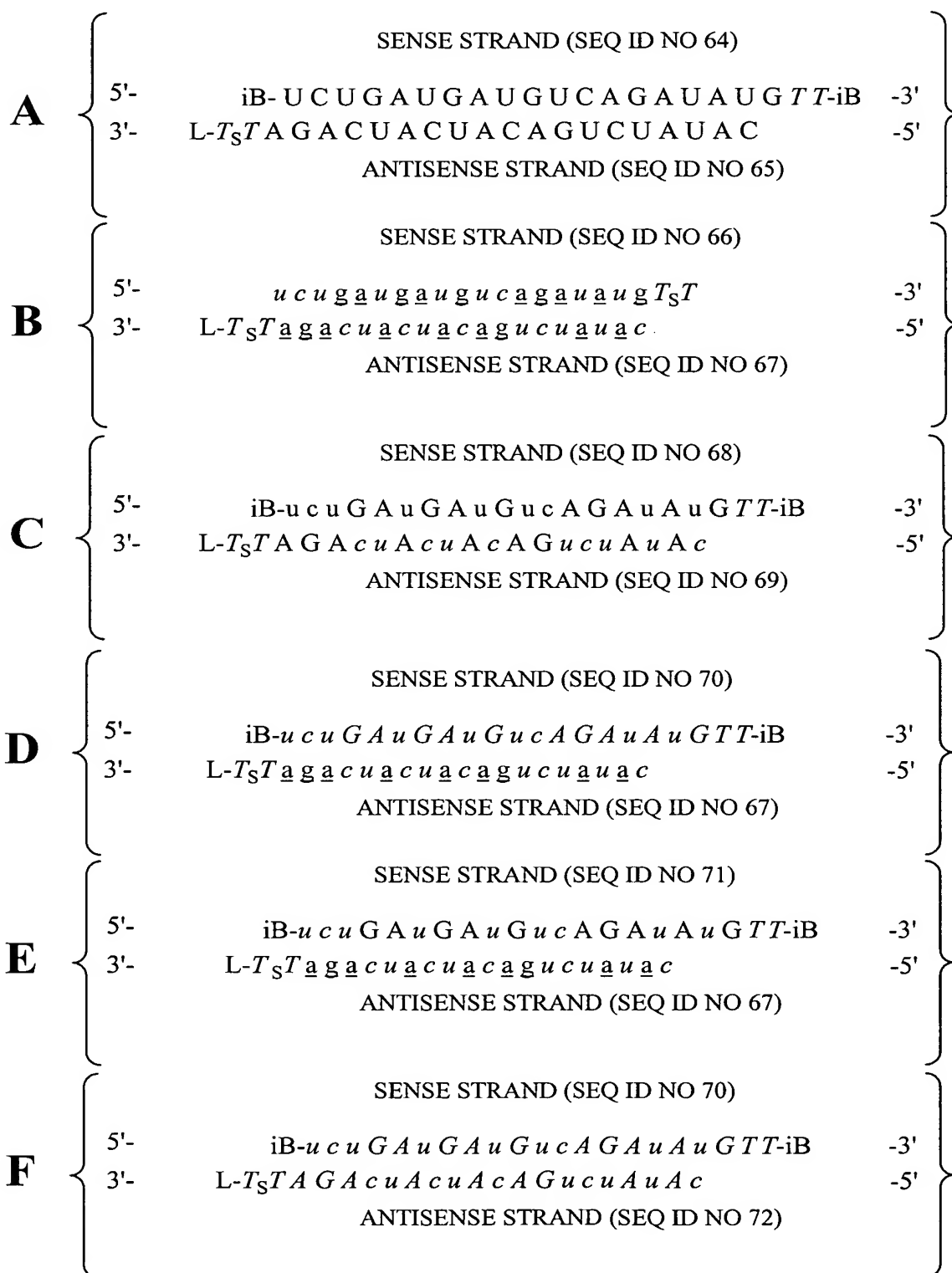


Figure 4



POSITIONS (NN) CAN COMPRISE ANY NUCLEOTIDE, SUCH AS DEOXYNUCLEOTIDES (eg. THYMIDINE) OR UNIVERSAL BASES
B = ABASIC, INVERTED ABASIC, INVERTED NUCLEOTIDE OR OTHER TERMINAL CAP THAT IS OPTIONALLY PRESENT
L = GLYCERYL or B THAT IS OPTIONALLY PRESENT
S = PHOSPHOROTHIOATE OR PHOSPHORODITHIOATE that is optionally absent

Figure 5



lower case = 2'-O-Methyl or 2'-deoxy-2'-fluoro

italic lower case = 2'-deoxy-2'-fluoro

underline = 2'-O-methyl

ITALIC UPPER CASE = DEOXY

iB = INVERTED DEOXYABASIC

L = GLYCERYL MOIETY or iB OPTIONALLY PRESENT

S = PHOSPHOROTHIOATE OR

PHOSPHORODITHIOATE OPTIONALLY PRESENT

Figure 6

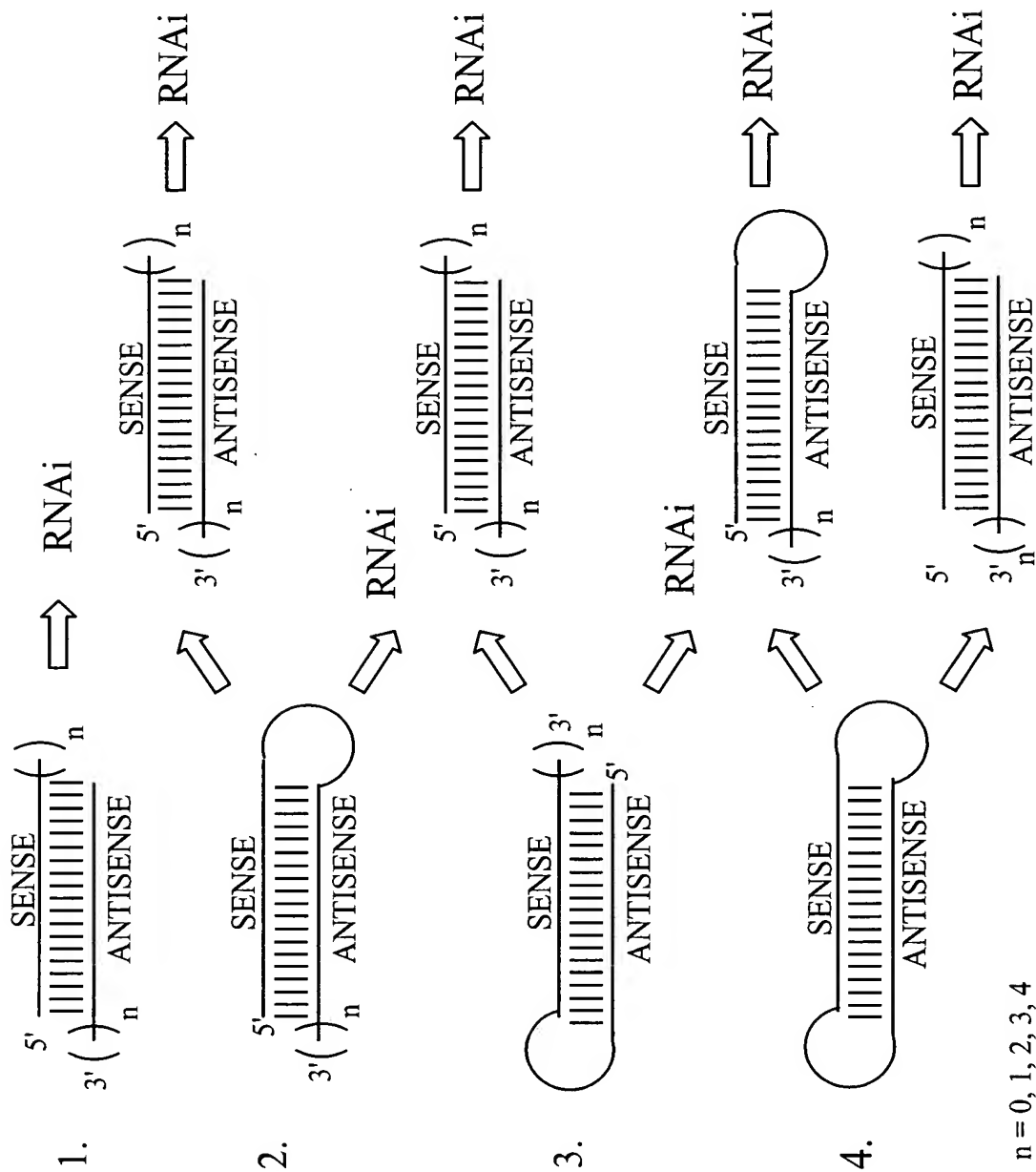
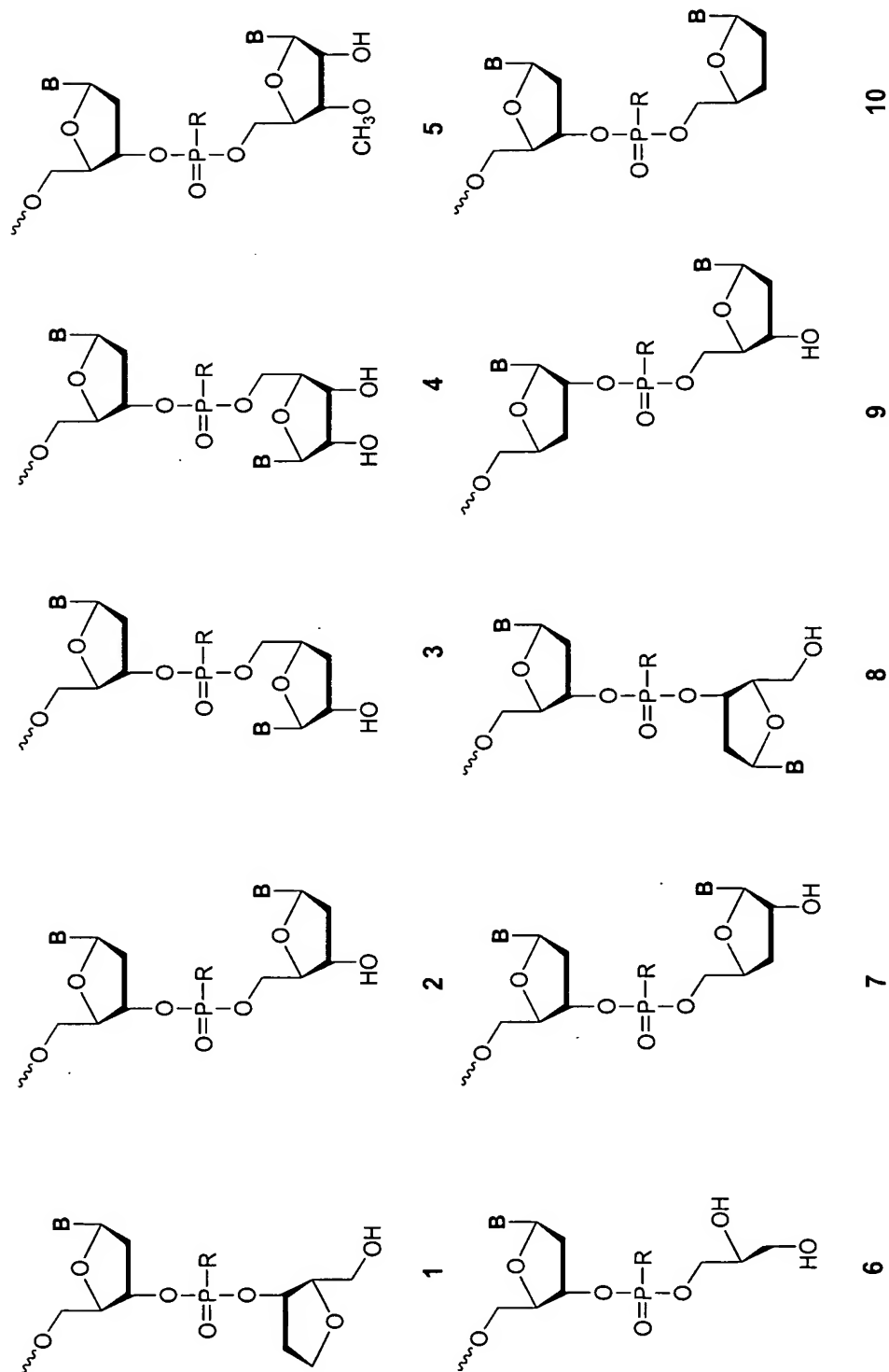


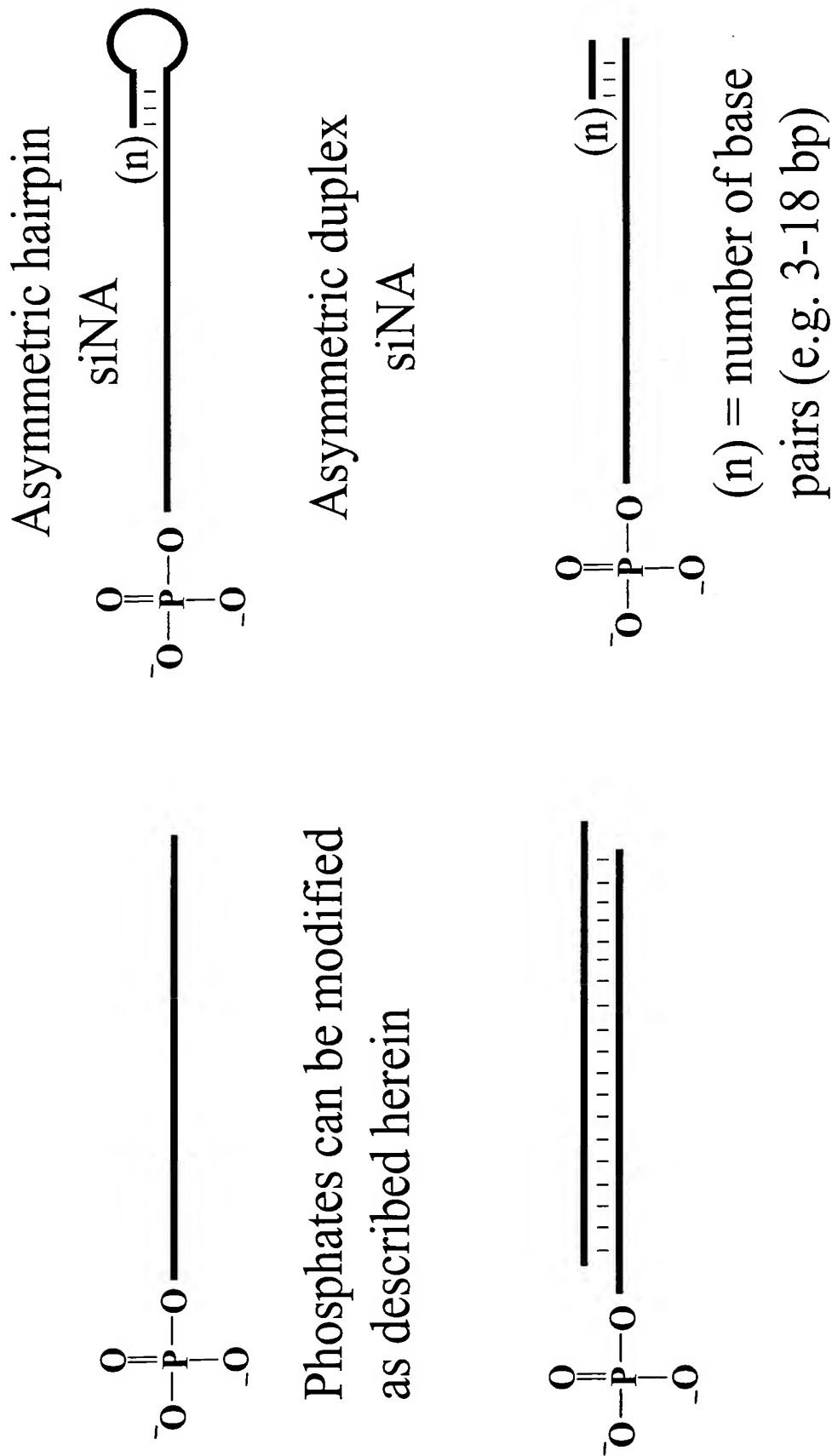
Figure 7



R = O, S, N, alkyl, substituted alkyl, O-alkyl, S-alkyl, alkaryl, or aralkyl

B = Independently any nucleotide base, either naturally occurring or chemically modified, or optionally H (abasic).

Figure 8: Phosphorylated siNA constructs



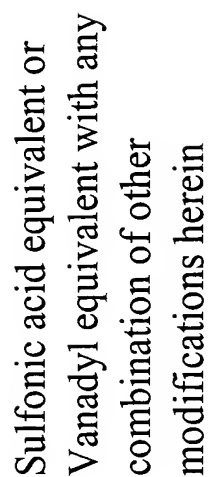


Figure 10A: Duplex forming oligonucleotide constructs that utilize palindrome or repeat sequences

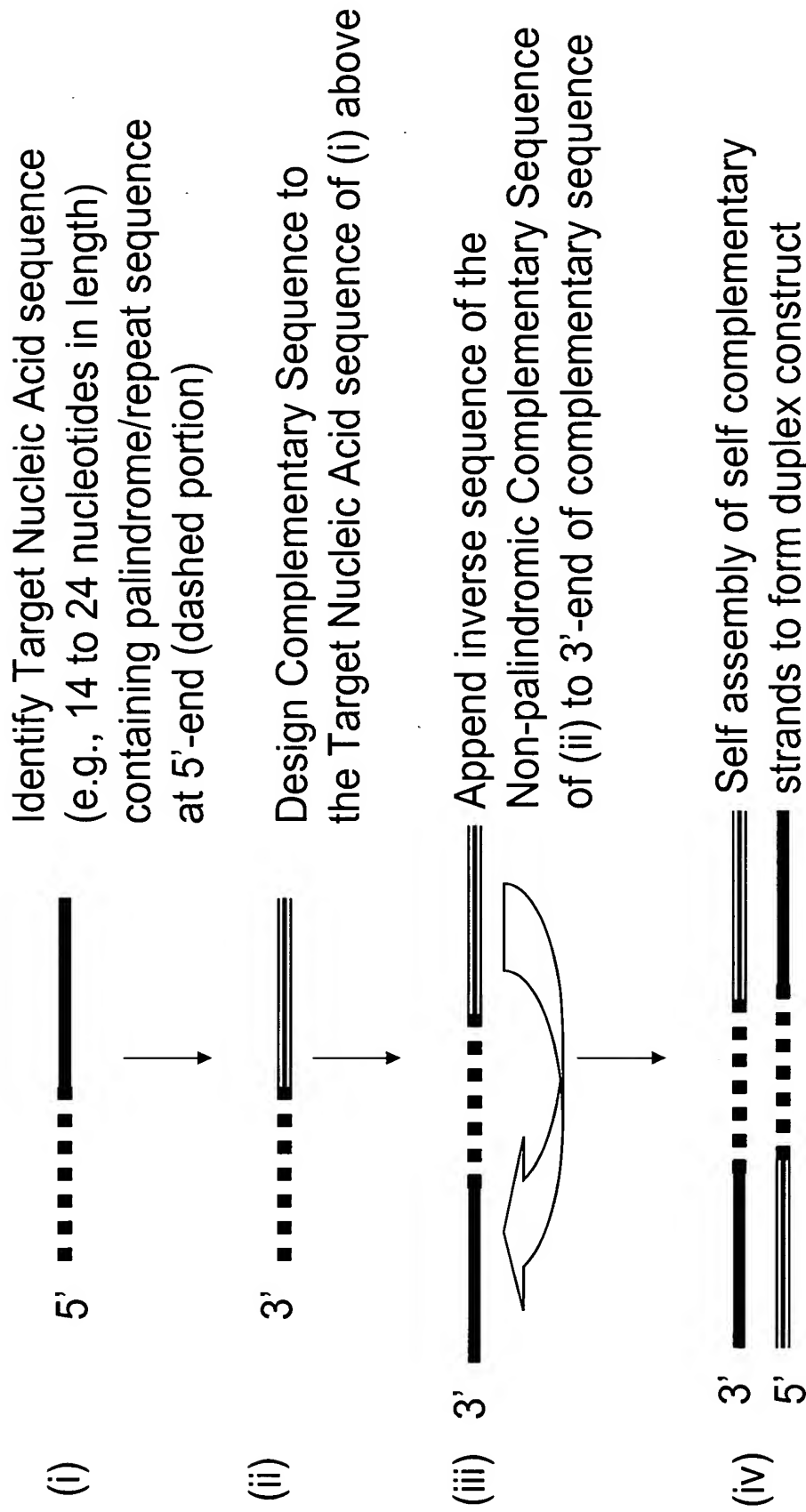


Figure 10B: Example of a duplex forming oligonucleotide sequence that utilizes a palindrome or repeat sequence

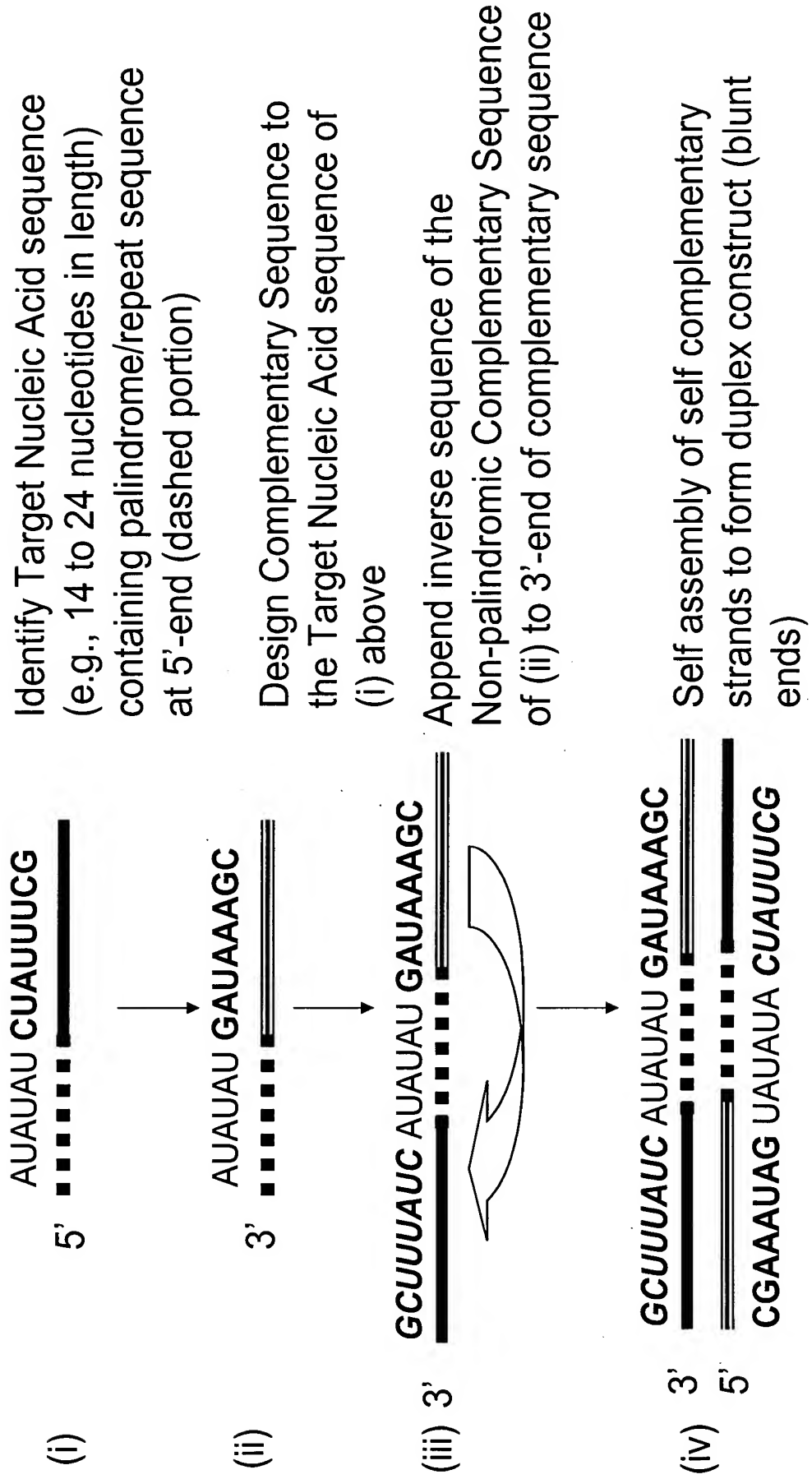


Figure 10C: Example of a duplex forming oligonucleotide sequence that utilizes a palindrome or repeat sequence, self assembly

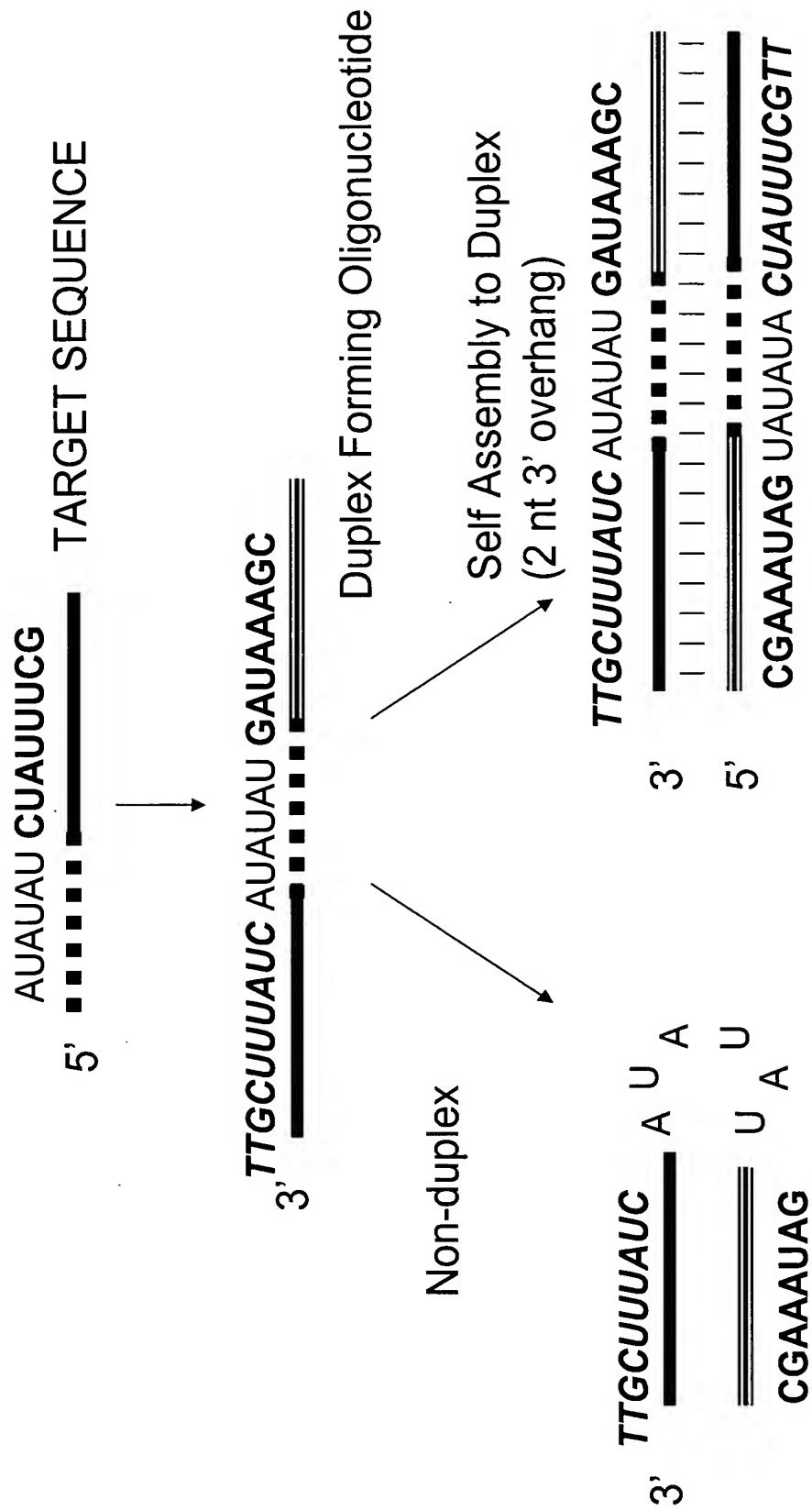


Figure 10D: Example of a duplex forming oligonucleotide sequence that utilizes a palindrome or repeat sequence, self assembly and inhibition of Target Sequence Expression

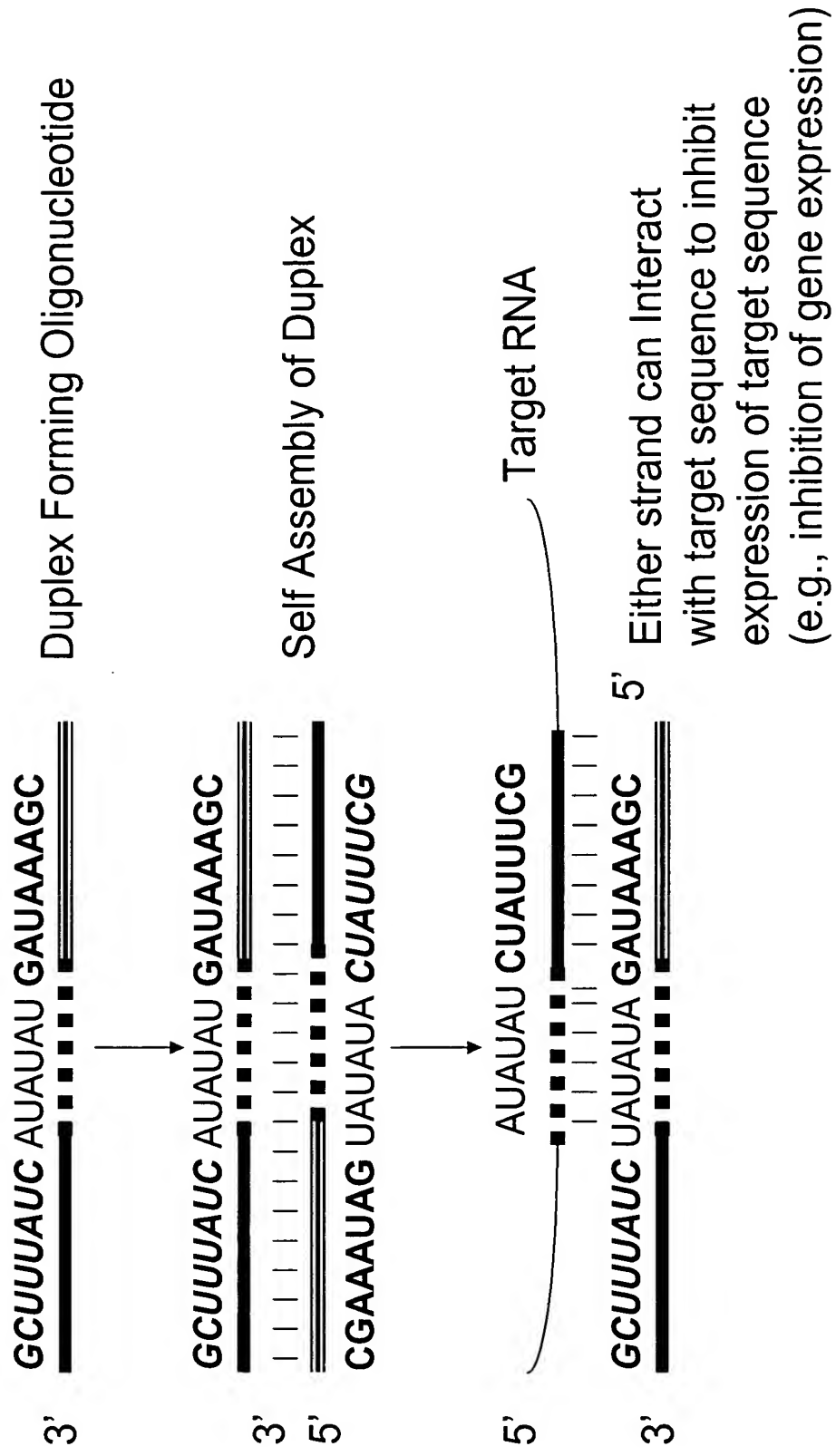


Figure 11: Duplex forming oligonucleotide constructs that utilize artificial palindrome or repeat sequences

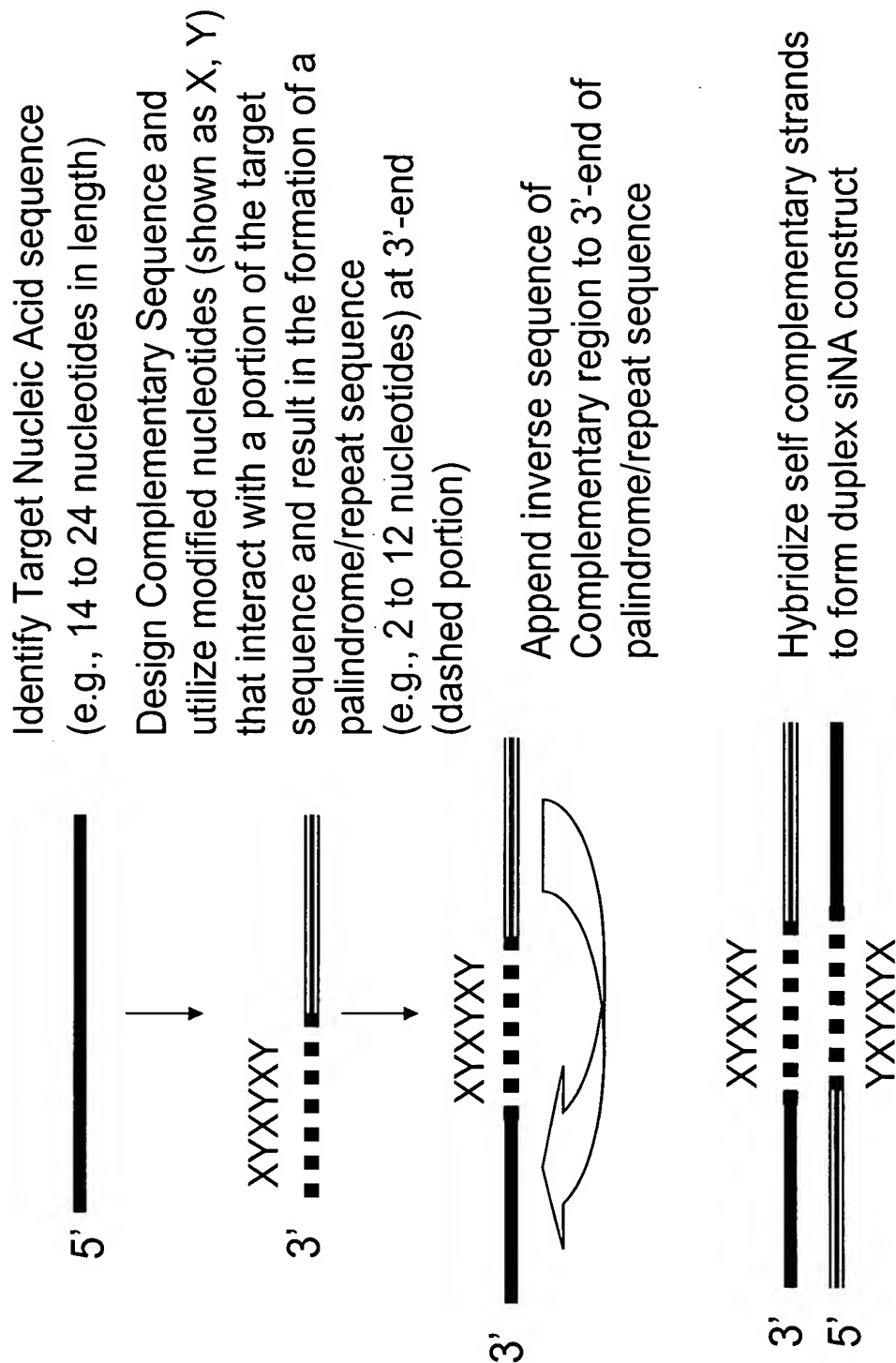


Figure 12: Examples of double stranded multifunctional siNA constructs with distinct complementary regions

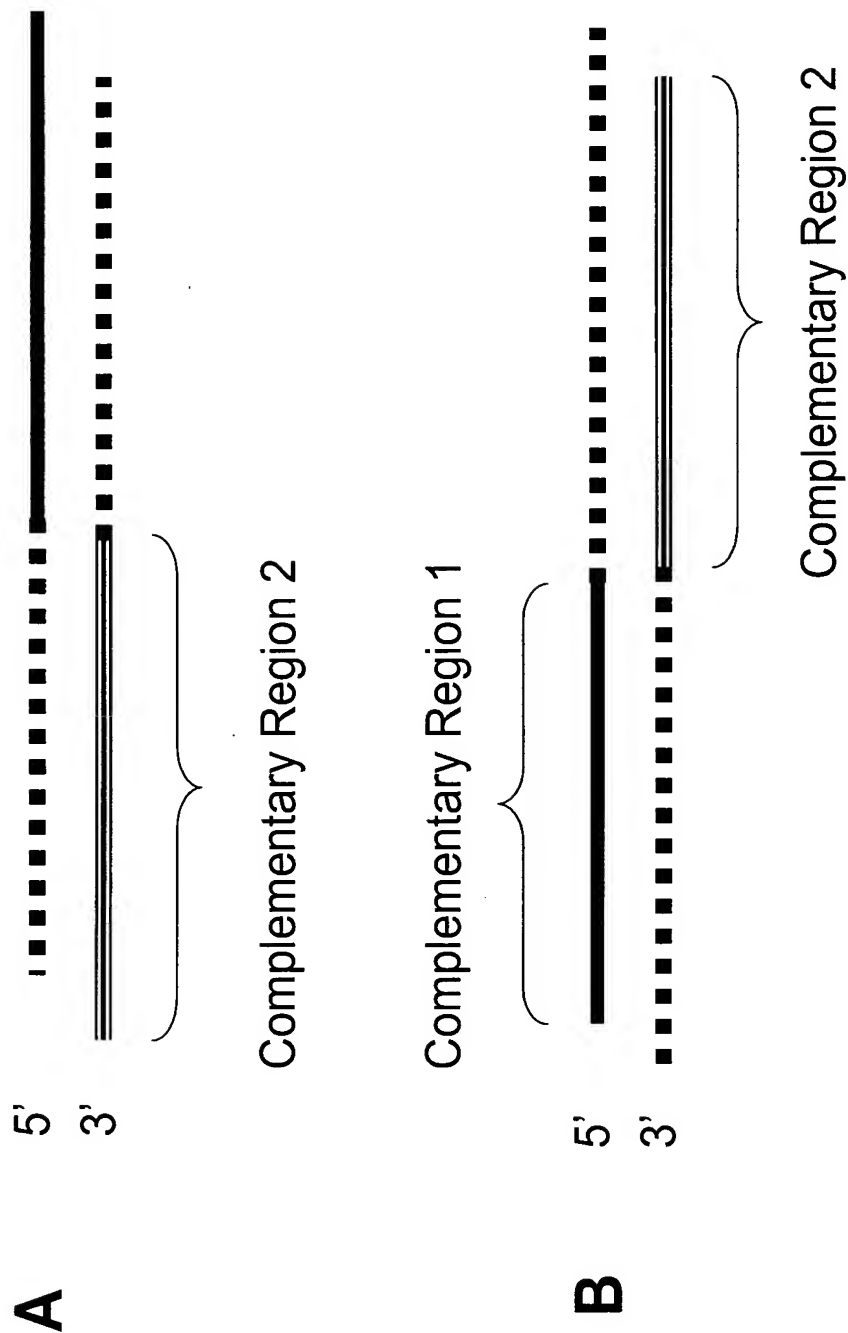


Figure 13: Examples of hairpin multifunctional siNA constructs with distinct complementary regions

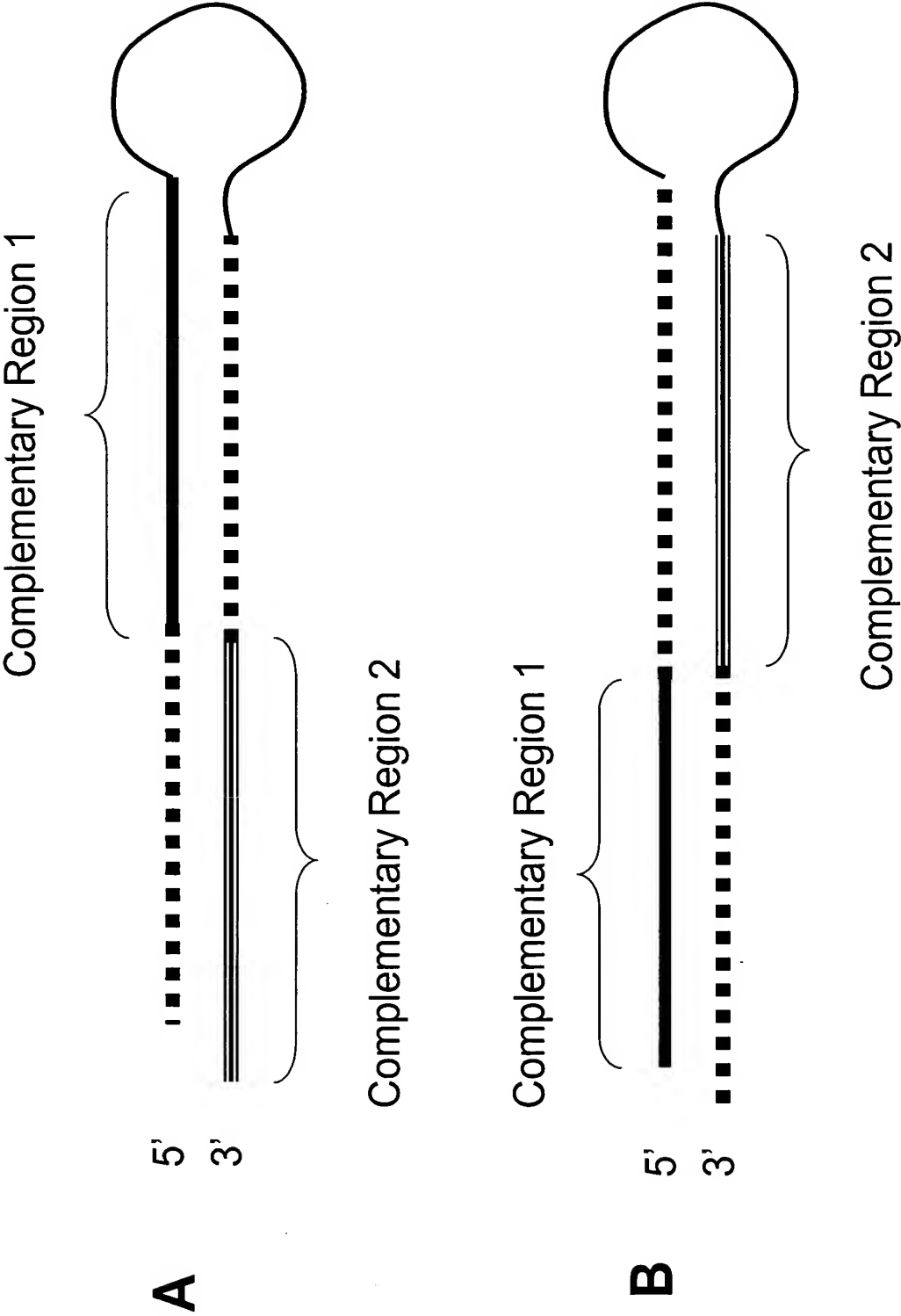


Figure 14: Examples of double stranded multifunctional siNA constructs with distinct complementary regions and a self complementary/palindrome region

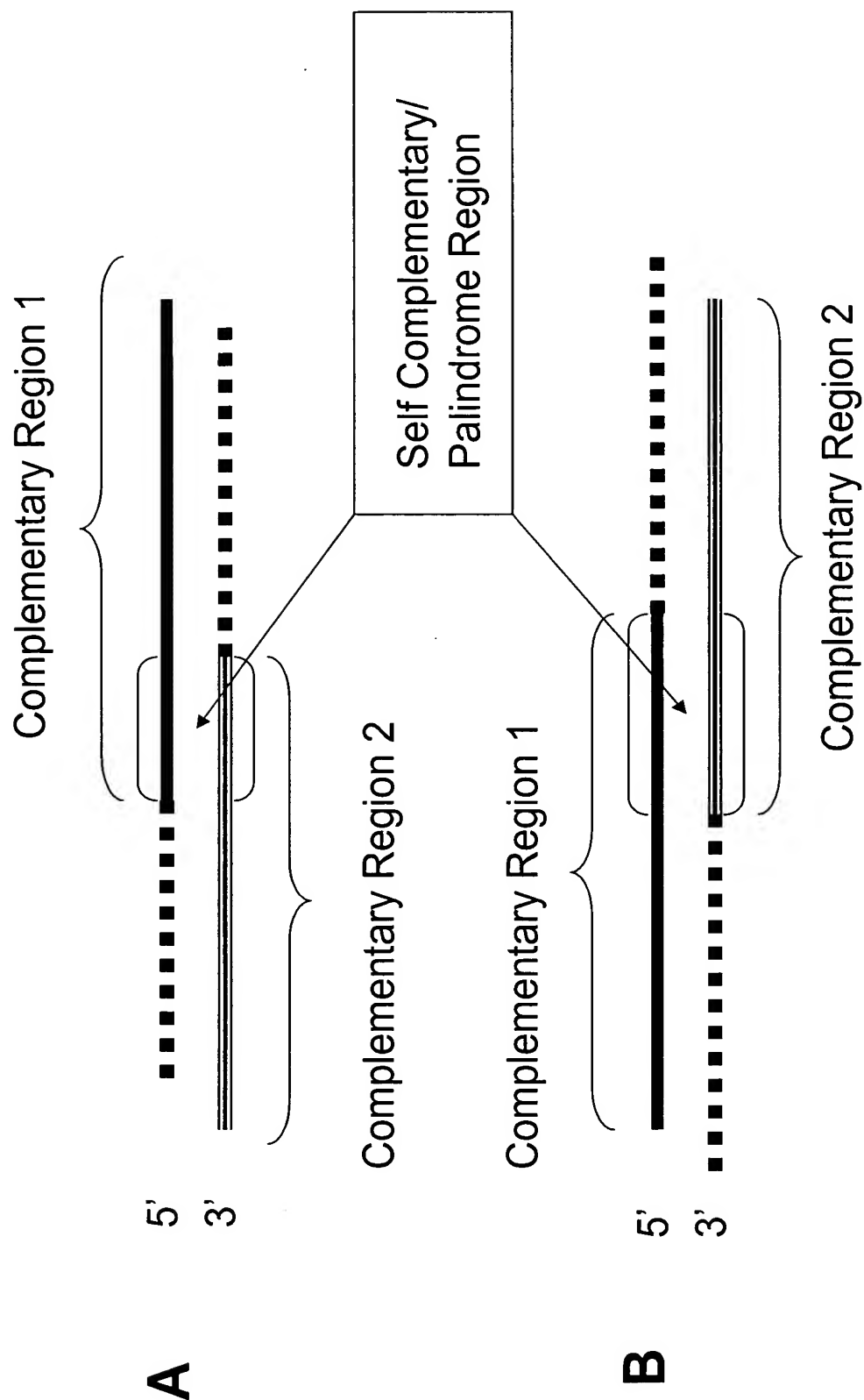


Figure 15: Examples of hairpin multifunctional siNA constructs with distinct complementary regions and a self complementary/palindrome region

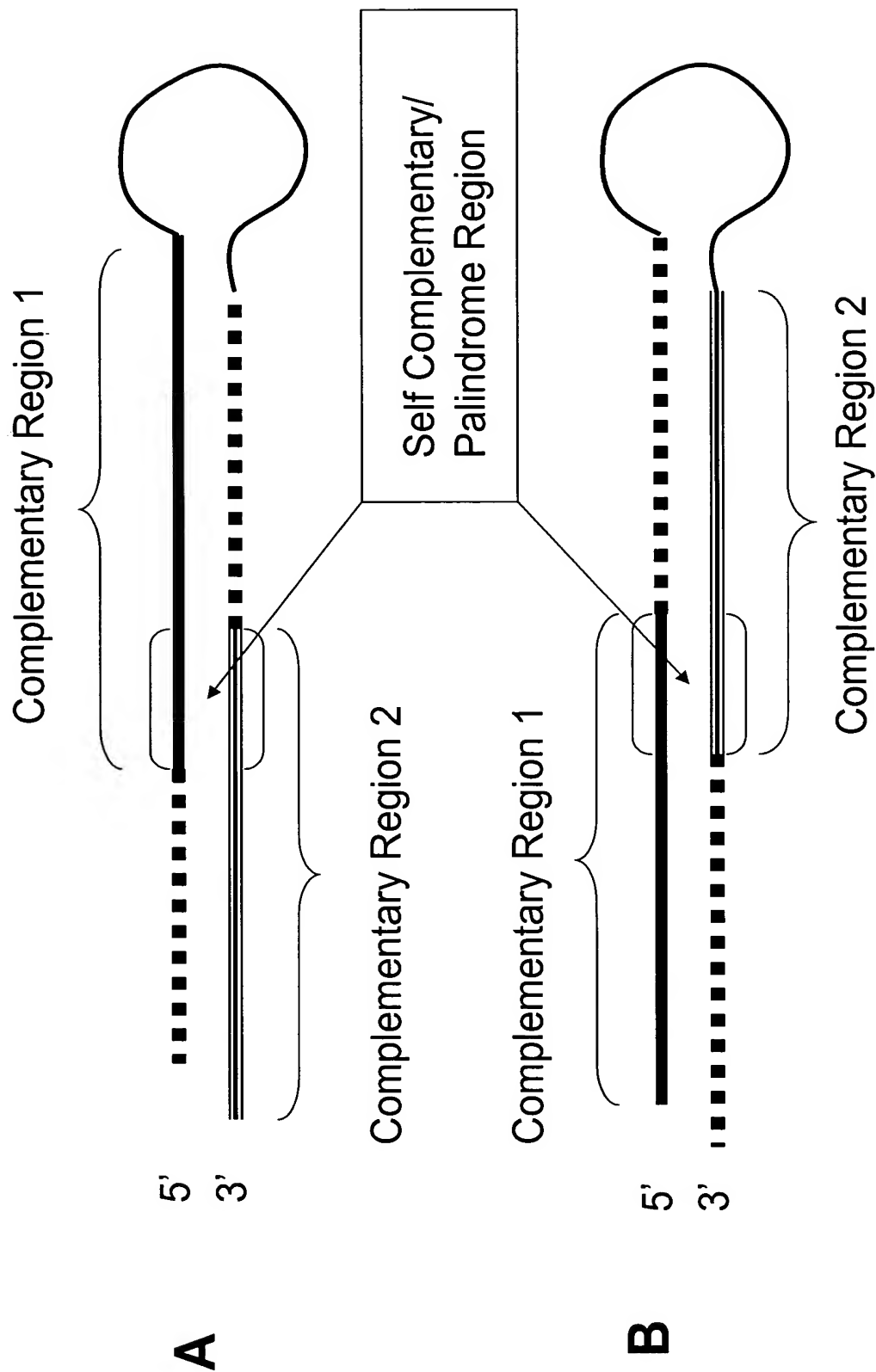


Figure 16: Example of multifunctional siNA targeting two separate
Target nucleic acid sequences

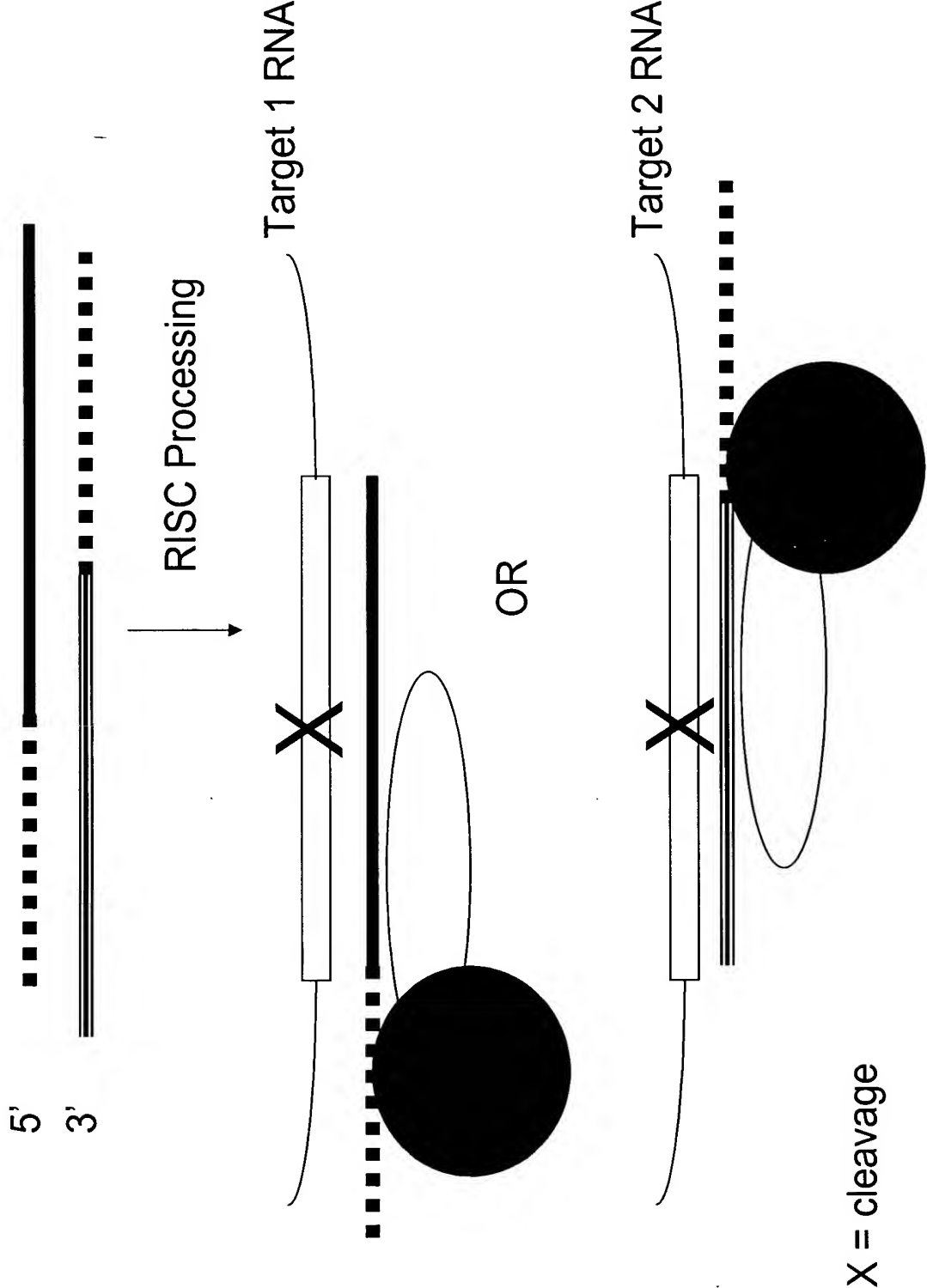


Figure 17: Example of multifunctional siNA targeting two regions within the same target nucleic acid sequence

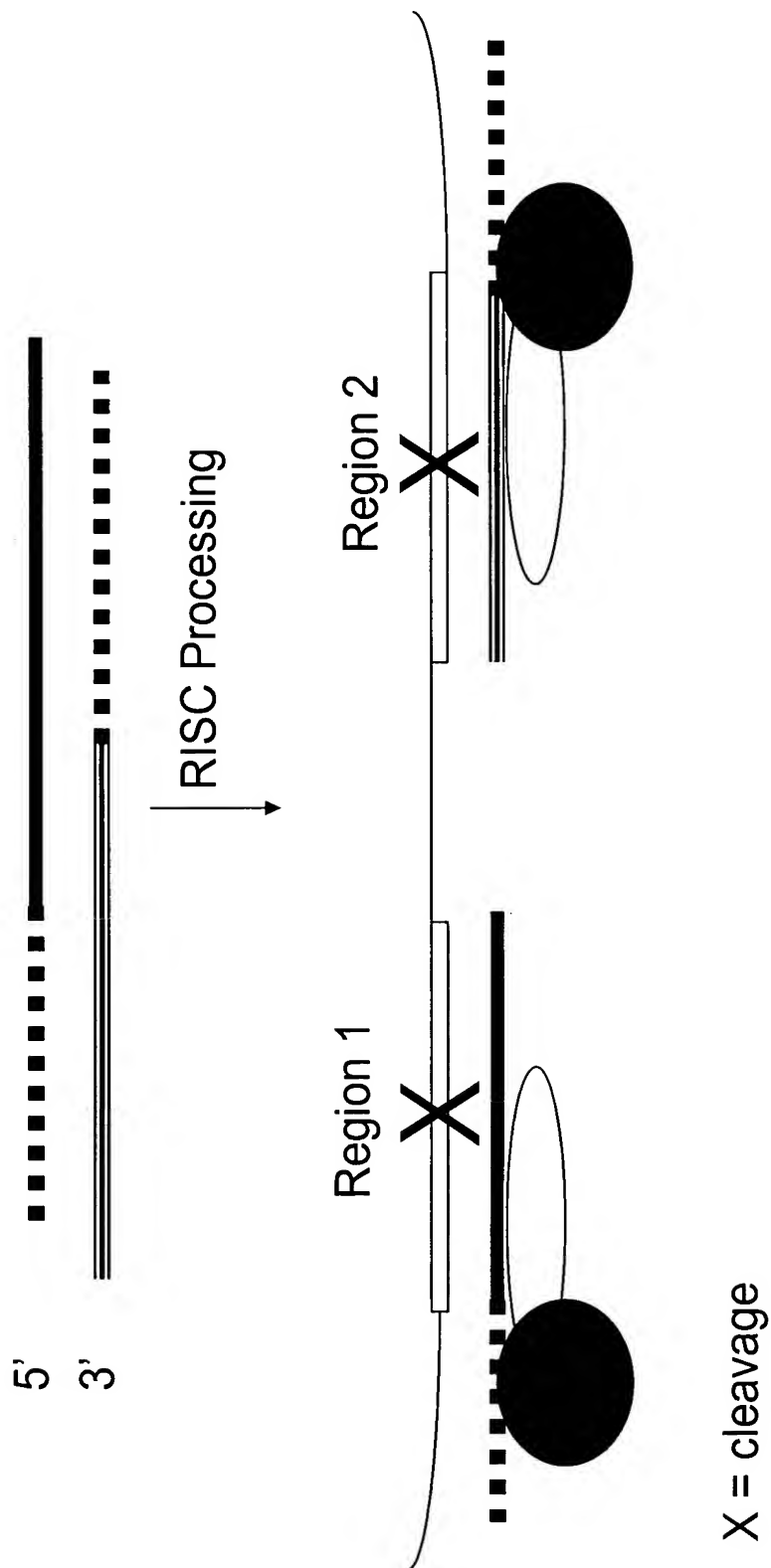
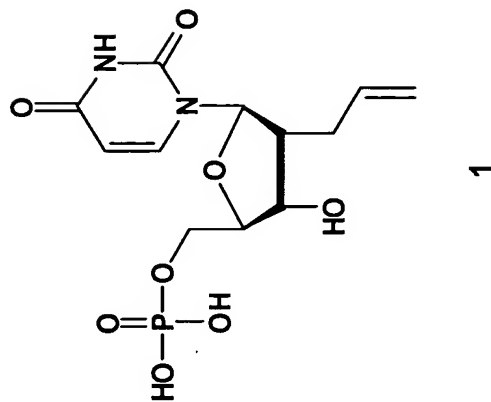
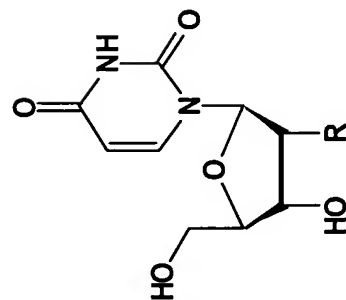


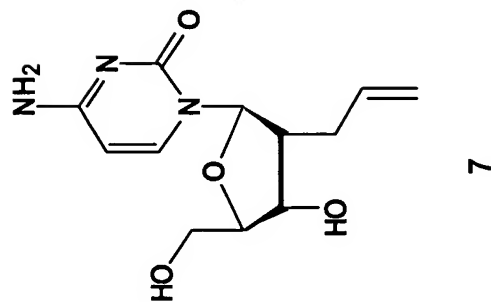
Figure 18



1



- 2. R = NH₂
- 3. R = OCH₃
- 4. R = H
- 5. R = OCH₂-CH=CH₂
- 6. R = CH₂CH₂CH₃
- 8. R = F



7

Figure 19

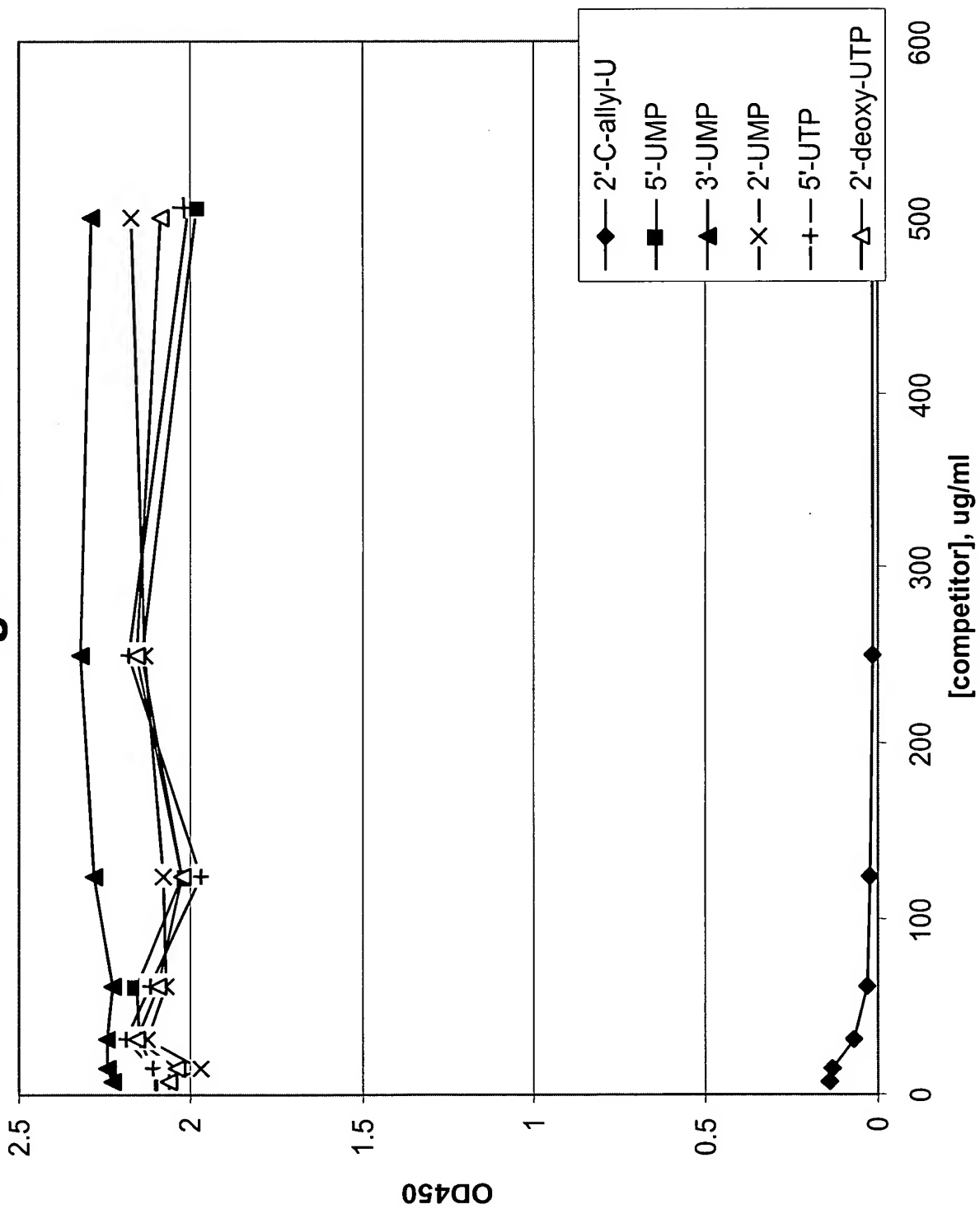
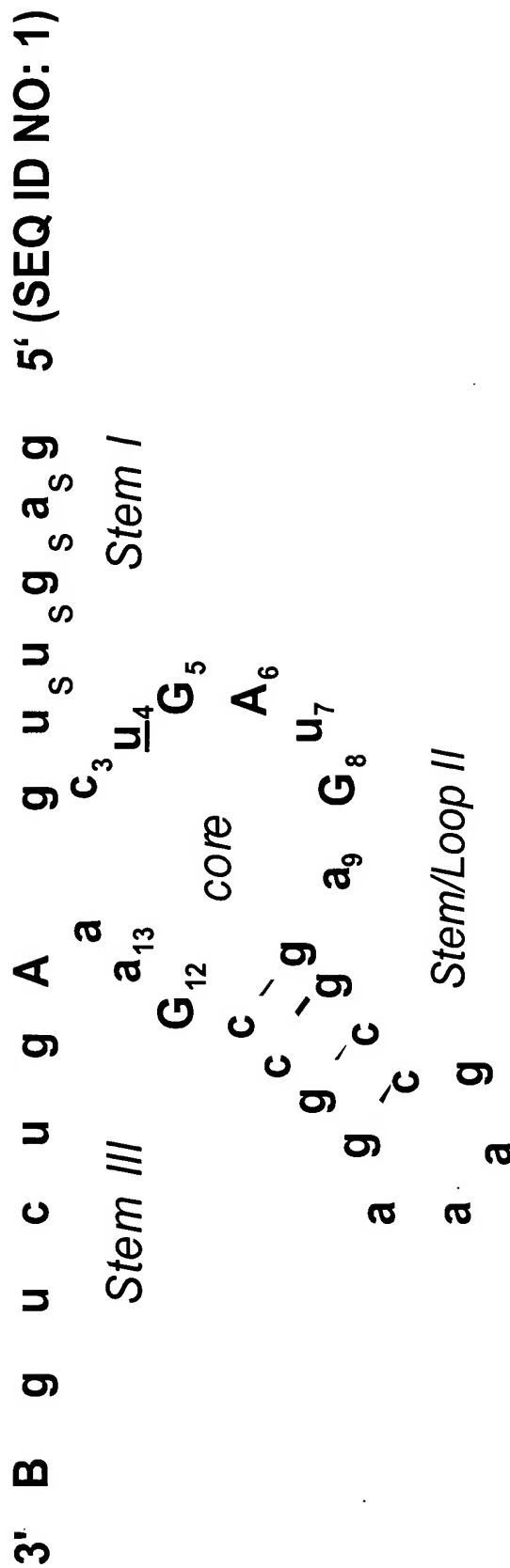


Figure 20



Uppercase: ribonucleotide

Lowercase: 2'-O-Me nucleotide

U: 2'-deoxy-2'-C-allyl Uridine

B: inverted 2'-deoxyribose abasic

S: phosphorothioate linkage

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Figure 21

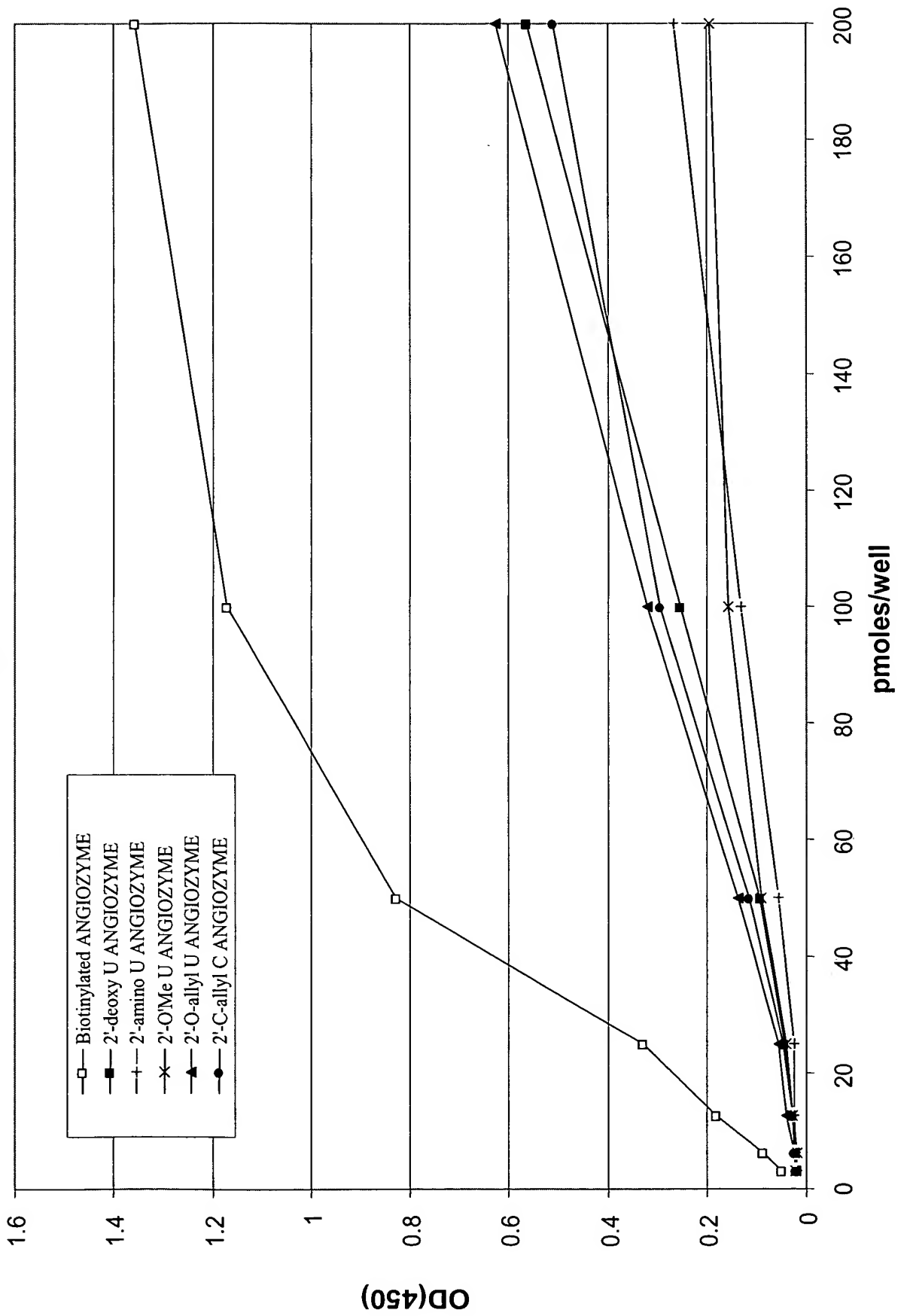


Figure 22

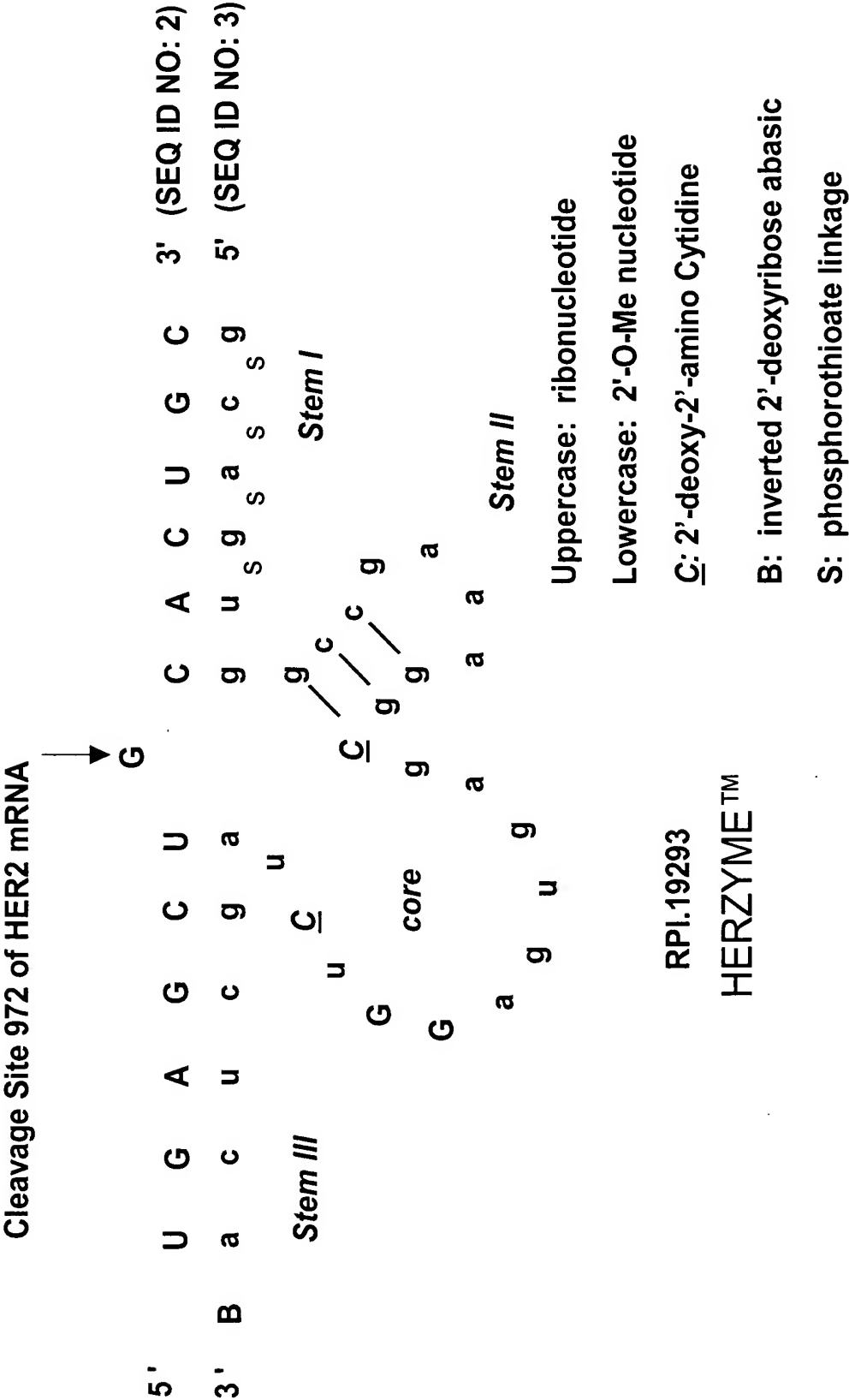


Figure 23

**Binding of FU1SR to a series of oligonucleotides in
EIA**

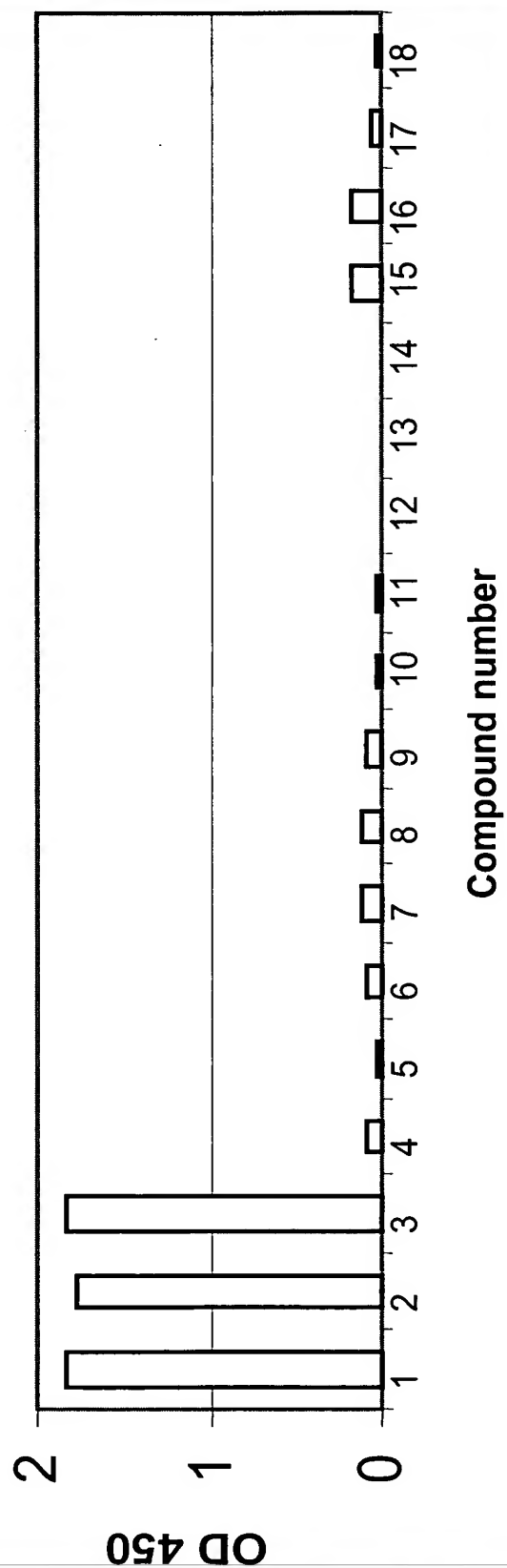


Figure 24

